

## **REMARKS**

### **I. Status of the Application**

In view of the above amendments and the following remarks, reconsideration of the rejections set forth in the Office Action of August 23, 2011 is respectfully requested.

By this amendment, claims 1, 3, 5, 9, 11, 13, 15, 20, and 21 have been cancelled without prejudice or disclaimer to the subject matter contained therein, and claims 22-32 have been added. Claims 22-32 are now pending in the application. No new matter has been added by these amendments.

### **II. 35 U.S.C. § 112**

Beginning on page 2 of the Office Action, claims 1, 3, 5, 9, 11, 13, 15, and 20 are rejected as failing to comply with the written description requirement. These rejections are moot in view of the cancellation of claims 1-21. Moreover, new claims 22-32 have been drafted to obviate the new matter issues noted by the Examiner. Withdrawal of these rejections is respectfully requested.

Beginning on page 4 of the Office Action, claims 1, 3, 5, 9, 11, 13, 15, and 20 are rejected as being indefinite. These rejections are moot in view of the cancellation of claims 1-21. Moreover, new claims 22-32 have been drafted to overcome the indefiniteness issues noted by the Examiner. Withdrawal of these rejections is respectfully requested.

### **III. Prior Art Rejections**

Claims 1, 3, 5, 9, 11, 15, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoashi et al. (JP 56-121462) in view of Garlick (US 6,537,494) in view of

Swart et al. (US 2002/0192340) and claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoashi et al. in view of Garlick in view of Swart et al. and further in view of Tran et al. (US 6,248,986).

The prior art rejections are moot in view of the cancellation of claims 1-21, and it is submitted that the present invention is now clearly distinguished over the applied prior art for the following reasons. Claim 22 recites a method for sterilizing and producing a fish-paste product by utilizing microbubbles, the method comprising: adding ozone gas-containing microbubbles generated in water to raw materials of a fish-paste product, the microbubbles having a diameter of 50  $\mu$ m or less; coating the interfaces of the ozone gas-containing microbubbles with tissues contained in raw materials of the fish-paste product thereby creating coating shells made of the tissues to maintain the longevity of the ozone gas-containing microbubbles, the shells covering the ozone gas-containing microbubbles; giving stimulation to a part of the ozone gas-containing microbubbles thereby rupturing the coating shells of the ozone gas-containing microbubbles while the ozone gas-containing microbubbles are in the fish-paste product, thereby sterilizing the fish paste product by the formation of active oxygen and free-radical species; and repeating said operation of giving stimulation to a part of the ozone gas-containing microbubbles after processing and packaging the fish-paste product.

As acknowledged by the Examiner on page 6 of the Office Action, the Hoashi reference does not disclose the use of ozone-containing microbubbles, but instead discloses grinding a fish-paste product in the presence of ozone in a hermetically sealed environment. The Swart et al. reference does disclose ozone-containing microbubbles, but instead only discloses “contacting the food product with an antimicrobial agent” (see claim 1 for instance) in combination with

irradiating the food product. The Tran et al. reference does not disclose microbubbles, ozone, or fish products, but instead merely discloses microwave irradiation for sterilizing food.

Importantly, the Garlick also does not disclose ozone-containing microbubbles. Instead, the Garlick reference discloses a sterilizing fog made from ozone dissolved in water. The Office Action cites column 4, lines 25-28 as disclosing bubbles, however this portion of the Garlick reference describes a step of causing the ozone gas to dissolve into water. Additionally, while the Office Action refers to portions of the Garlick reference which disclose the diameter of fog droplets, no portion of the Garlick reference discloses these droplets as containing or including microbubbles.

In view of the above, none of the applied prior art discloses ozone-containing microbubbles, and thus the subject matter of claim 22 is not disclosed or rendered obvious by these references.

Moreover, it is noted that the Supreme Court has explained: “Rejection of a patent on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support a legal conclusion of obviousness.” *KSR International Co. v. Teleflex Inc.*, 550 US 398 (2007) (emphasis added). Thus, while the analysis under 35 U.S.C. 103 allows flexibility in determining whether a claimed invention would have been obvious, it still requires showing that “there was an apparent reason to combine the known elements in the fashion claimed by the patent [or application] at issue.” *Id.* (Emphasis added). An invention “composed of several elements is not proved obvious merely by demonstration that each of its elements was, independently, known in the prior art.” *Id.* The obviousness analysis “should be made explicit,” and it “can be important to identify a

reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.*

In the present application, none of the prior art discloses ozone-containing microbubbles. None of the prior art discloses coating such ozone-containing microbubbles with tissues. None of the prior art discloses stimulating such microbubbles thereby rupturing coating shells of the microbubbles, and none of the prior art discloses repeating the stimulating step after packaging the fish-paste product. The Office Action suggests an amalgamation of several references which, independently or in combination, do not disclose any step recited in independent claim 22. There is no rational underpinning set forth in the Office Action explaining why one skilled in the art would have deviated from the distinct teachings of the applied prior art references in a manner yielding the claimed invention. As such, no prima facie case of obviousness has been established, and withdrawal of the obviousness rejection is respectfully requested.

Further, it appears as though there would have been no reason to modify any of the prior art of record to yield a configuration which would meet the requirements of claim 22. It is thus submitted that the invention of the present application, as defined in claim 22, is not anticipated nor rendered obvious by the prior art, and yields significant advantages over the prior art. Allowance is respectfully requested.

Claims 23-31 depend from claim 22 and are thus allowable for at least the reasons set forth above in support of claim 22. Claim 32 includes subject matter similar to that of claim 22, and it is submitted that claim 32 is allowable for at least the reasons set forth above in support of claim 22.

In view of the foregoing amendments and remarks, inasmuch as all of the outstanding issues have been addressed, it is respectfully submitted that the present application is now in

condition for allowance, and action to such effect is earnestly solicited. If any issues remain after consideration of the response, the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,

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